Managing HyperFlex Stretch Clusters

Overview

You can view do the following for the sites and the witness VM or Invisible Cloud Witness node in a stretch cluster using HX Connect:

- View the Operational Status and Resiliency Status of the HyperFlex cluster on both the sites and the witness VM or Invisible Cloud Witness node.

- View the Functional status of the sites and the witness VM or Invisible Cloud Witness node, the IP address of the witness VM, and the status of the Invisible Cloud Witness node. View HX storage cluster system-related information, including node and disk data.

- Enter/Exit HX maintenance mode.

- Associate a datastore with one of the sites in a stretch cluster, when creating the datastore.

Monitoring the Health of a Stretch Cluster

You can view the Operational Status and Resiliency Status of the HyperFlex cluster on both the sites and the witness VM or Invisible Cloud Witness node in HX Connect on the Dashboard page.

Important If you are a read-only user, you may not see all the options available in the Help. To perform most actions in HX Connect, you must have administrative privileges.

Step 1   Log into HX Connect.

a) Enter the HX Storage Cluster management IP address in a browser. Navigate to *https://<storage-cluster-management-ip>*.

b) Enter the administrative username and password.

c) Click **Login**.

Step 2   On the left navigation pane, click **Dashboard**.

Step 3   On the **Dashboard** you can view the following details for the HyperFlex Stretch Cluster:

Displays a status summary of your HX storage cluster for the sites across the Stretch cluster.

UI Element	Essential Information
Operational Status section	Provides the functional status and application performance of the HX storage cluster on Site A and Site B.
	Provides the functional status and application performance of the witness VM or Invisible Cloud Witness node.
	Click **Information** (ⓘ) to access the HX storage cluster name and status data.
Resiliency Health section	Provides the data health status and the ability of the HX storage cluster on Site A and Site B to tolerate failures.
	Click **Information** (ⓘ) to access the resiliency status, replication and failure data. This also provides information about data replication compliance, caching device failures tolerable, and device failures tolerable on each node in both the sites.
Capacity section	Displays a breakdown of the total storage versus how much storage is used or free.
	Also displays the storage optimization, compression-savings, and deduplication percentages based on the data stored in the cluster.
Nodes section	Displays the number of nodes and the division of converged versus compute nodes across Site A and Site B in the Stretch Cluster.
	Hovering over a node icon displays that node's name, IP address, node type, and an interactive display of disks with access to capacity, usage, serial number, and disk type data.
Performance section	Displays an HX storage cluster performance snapshot for a configurable amount of time, showing IOPS, throughput, and latency data.
	For full details, see **Performance Page**.
Cluster Time field	System date and time for the cluster.

Several tables in HX Connect provide one or more of the following three fields that affect the content displayed in the table.

UI Element	Essential Information
Refresh field and icon	The table automatically refreshes for dynamic updates to the HX Cluster. The timestamp indicates the last time the table was refreshed. Click the circular icon to refresh the content now.
Filter field	Display in the table only list items that match the entered filter text. The items listed in the **current** page of the table are automatically filtered. Nested tables are not filtered. Type in the selection text in the **Filter** field. To empty the **Filter** field, click the **x**. To export content from other pages in the table, scroll to the bottom, click through the page numbers, and apply the filter.
Export menu	Save out a copy of the **current** page of table data. The table content is downloaded to the local machine in the selected file type. If the listed items are filtered, the filtered subset list is exported. Click the down arrow to select an export file type. The file type options are: cvs, xls, and doc. To export content from other pages in the table, scroll to the bottom, click through the page numbers, and apply the export.

Viewing System Information

On the **System Information** page, you can view HX storage cluster system-related information, including node and disk data. You can also Enter or Exit Maintenance Mode for the sites.

Step 1   Log into HX Connect.

a) Enter the HX Storage Cluster management IP address in a browser. Navigate to *https://<storage-cluster-management-ip>*.
b) Enter the administrative username and password.
c) Click **Login**.

Step 2   On the left navigation pane, select **System Information**.

Step 3   Under the **System Overview** tab you can view the following information for both the sites and the witness VM or Invisible Cloud Witness node:

HX Storage Cluster Configuration Data tab

Displays the basic configuration information the HX storage cluster on the stretch cluster sites.

Field	Description
HX storage cluster field	Name of this storage cluster.

Field	Description
Cluster License Status section	Displays the **Register Now** link when you log into the HX storage cluster for the first time or till the HX storage cluster license is registered: **Register Now** link—To register a cluster license, click this link and provide product instance registration token in the **Smart Software Licensing Product Registration** screen. For more information on how to get a product instance registration token, refer the **Registering a Cluster with Smart Licensing** section in the Cisco HyperFlex Systems Installation Guide for VMware ESXi. **Note** To register a cluster license, you can also choose **Register Cluster** from the **Actions** drop-down field.

License section	• **License Type**—Displays Evaluation, Edge, Standard, or Enterprise as the HX storage cluster license type.
	
	• **License Status**—Displays one of the following as the HX storage cluster license status:
	
	    • In compliance
	
	    • License expires in <n> days. Cluster not registered - Register Now. (This status appears for Evaluation type license)
	
	    • License expired. Cluster not registered - Register Now. (This status appears for Evaluation type license)
	
	    • Out of compliance - License expired on <date>
	
	    • Out of compliance - Insufficient license
	
	    • Certificate expired—This status appears when ID certificate is not renewed for more than six months.
	
	    • Authentication expired—This status appears when HX is unable to communicate with Cisco Smart Software Manager or Smart Software Manager satellite for more than 90 days.
	
	Note To refresh license certificate or renew license authorization, choose the respective options from the **Actions** drop-down field.

HX storage cluster status field	Provides functional status of the HX storage cluster in Site A and Site B:
	
	    • **Online**—Cluster is ready.
	
	    • **Offline**—Cluster is not ready.
	
	    • **Read Only**—Cluster is out of space.
	
	    • **Unknown**—Transitional state while the cluster is coming online.

vCenter link	Secure URL to the VMware vSphere associated with this HX storage cluster. Click the link to remotely access the vSphere Web Client.
Hypervisor field	Hypervisor version installed on this HX storage cluster.

Field	Description
HXDP Version field	Installer package version installed on this HX storage cluster.
Data Replication Factor field	Number of the redundant data replicas stored on this HX storage cluster.
Uptime field	Length of time this HX storage cluster has been online.
Total Capacity field	Overall storage size of this cluster.
Available Capacity field	Amount of free storage in this cluster.
DNS Server(s) field	IP address for the DNS server(s) for this HX storage cluster.
NTP Server(s) field	IP address for the NTP server(s) for this HX storage cluster.
Witness IP Address field	Witness VM: Provides the IP address Invisible Cloud Witness: Shows the status and (INTERSIGHT)

Step 4   Use **Actions** list to access the controller VM using SSH as an administrator and perform actions in the following table.

> **Note**   Actions to enable or disable SSH can only be performed by **domain** users, and not local users. Domain users are users in VC (ESXi).

UI Element	Essential Information
Disable Controller Access over SSH	Secure Shell (SSH) is disabled by default.
Register Now	Register your license.
Re-register vCenter	Re-register your license via vCenter
Check Secure Boot Status	Verify your Secure Boot Status
Change Preferred Site	The site designated to serve requests in the event that the connectivity between sites is down. In the Change Preferred Site window, use the radio button to select the preferred site, and click **Update** to confirm your selection.

Step 5   Under the **Nodes** tab, you can view the following information:

Displays data about individual nodes in this HX storage cluster. To see this information in tabular format, go to the **Nodes** page.

UI Element	Essential Information
Node field	Name of a node on this cluster.
Hypervisor Address field	IP address for the management network for this HX storage cluster.

UI Element	Essential Information
Hypervisor Status field	• **Online** • **Offline** • **In Maintenance** • **In Progress**
Controller Address field	IP address of the controller VM on this HX storage cluster.
Controller Status field	Status of the controller VM on this HX storage cluster. • **Online** • **Offline** • **In Maintenance** • **Healthy** • **Warning**
Model field	Physical hardware model number of this node.
Version	Installer package version installed on this node.
Disks field	Number of caching versus persistent disks in this node.
Command Line Mode field	Valid values are: **Root shell** or **Admin shell**.
Site	The site the node belongs to.

Step 6   Under the **Disks** tab, you can view the following information:

For nodes with disks, an interactive display of disks is included with the following pop-up data:

Table 1: Caching Disks

UI Element	Essential Information
Slot Number field	Location of the drive.
Storage Usage field	Percentage of disk storage used.
Status field	• **Claimed** • **Available** • **Ignored** • **Blocked** • **Ok to Remove** • **Unknown**

UI Element	Essential Information
Locator LED	Activates a physical light on the host to help locate a disk; options are **On** and **Off**.
Capacity field	Total disk size.
Serial Number field	Physical serial number of this disk.
Version	Disk version
Disk Drive Interface	Describes how the disk is connected. SATA is one example.

Table 2: Persistent Disks

UI Element	Essential Information
Status field	• **Claimed** • **Available** • **Ignored** • **Blocked** • **Ok to Remove** • **Unknown**
Locator LED action	Activates a physical light on the host to help locate a disk; options are **On** and **Off**.
Used / Total Capacity field	Amount of the disk used versus the total disk size.
Serial Number field	Physical serial number of this disk.
Storage Usage field	Percentage of disk storage used.
Version	Disk version
Disk Drive Interface	Describes how the disk is connected. SATA is one example.
Slot Number field	s Location of the drive.
Type field	Describes the disk type.Values include: Rotational or Solid State.
Usage field	Describes how the disk is being used: Peristent, System, or Cache.

Creating a Datastore

To associate a datastore with one of the sites in a stretch cluster, do the following:

Step 1   Log into HX Connect.

    a)   Enter the HX Storage Cluster management IP address in a browser. Navigate to *https://<storage-cluster-management-ip>*.

    b)   Enter the administrative username and password.

    c)   Click **Login**.

Step 2   On the left navigation page, click **Datastores**.

Step 3   In the work pane, click **Create Datastore**.

Step 4   Enter a datastore name and capacity.

UI Element	Essential Information
Datastore Name field	Enter a unique datastore name for this HX Storage Cluster.
Size field	Enter the quantity of the datastore. Select the unit of measure. Options are: **GB** and **TB**. Ensure it is sufficient to support the virtual machines in this HX Storage Cluster.

Block Size	Select a block size.
	  • 8K—Default
	  • 4K

Site Affinity	Select the radio button to associate the datastore with the site.

Step 5   Click **Create Datastore** to complete the action.

HX Data Platform creates a datastore and mounts it on every node in this HX Storage Cluster.

Shutting a Stretch Cluster Site Down Gracefully

There may be a need to shut a Stretch Cluster site down (for example, when relocating equipment, routine maintenance, site move, site work, failure testing etc.). If you have removed the VMware EAM dependency from your cluster (default in HX 4.0(2b) and later releases), then you can use HX maintenance mode in vCenter or through HX Connect to shutdown the control VMs on each node in a site. When this occurs, the site will shut down gracefully and the guest VMs will failover to the surviving site. You can then also power down ESXi on the nodes if you need to. If EAM is enabled on your CVMs, and you require more information on shutting down a site, see Appendix A in Operating Cisco HyperFlex HX Data Platform Stretch Clusters.

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Changing the Preferred Site

The preferred site is designated to serve requests in the event that the connectivity between sites is down. You can change the preferred site selection after install from HX Connect by performing the following steps:

Step 1   Log into HX Connect

   a) Enter the HX Storage Cluster management IP address in a browser. Navigate to https://<storage-cluster-management-ip>.

   b) Enter the administrative username and password.

   c) Click **Login**.

Step 2   On the left navigation pane, select **System Information**.

The preferred site is identified with a badge near the Site Name.

Step 3   Under the **System Overview** tab you can view the following information for both the sites and the witness node:**HX Storage Cluster Configuration Data** tab and select **Actions** from the list.

Step 4   In the **Change Preferred Site** window, use the radio button to select the preferred site

Step 5   Click **Update** to confirm your selection.